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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/559,415	04/26/2000	Mirosław Z. Bober	0054-0205P-SP	1497
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EXAMINER				
TO, BAOQUOC N				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/559,415

Applicant(s)

MIROSLAW Z. BOBER

Examiner

BAOQUOC N. TO

Art Unit

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-10 and 33-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-10 and 33-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/88)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 6-10 and 33-41 are pending in this application.

Response to Arguments

2. Applicant's arguments filed 04/04/2008 have been fully considered but they are not persuasive.

Applicant argues "Examiner rejects claims 6-10 and 33-41 under 35 U.S.C. § 103(a) as being unpatentable over Eakins in view of U.S. Patent No. 6,801,641 to Eraslan (hereinafter "Eraslan") and further in view of Japanese Patent JP 06-215105 to Haruo (hereinafter "Haruo"). This rejection is respectfully traversed. In addition to the foregoing remarks provided by the previous responses, we provide the following:

The present invention relates to searching for an image or sequence of images (still or video image) containing a specific object of interest to the searcher. This is done by searching through stored representations of images or sequences of images. The stored representations represent each image or sequence of images by an object descriptor of an object in the image or sequence of images. The object descriptor includes a plurality of view descriptors (associated together to form the object descriptor) which are descriptors of two-dimensional views of the object in the image or sequence of images from different perspectives. For example, the object descriptor includes a view descriptor of the object as it appears in the image or sequence of images (one two-dimensional perspective view) and view descriptors of the object in other two-dimensional perspective views (not appearing in the image or sequence of

images). This can be done, for example, by a person viewing the image or sequence of images; who recognizes the object in the image and the perspective view (such as a top view of a car) and associates descriptors of other views of a car (side, rear, underneath, etc), the views being taken, for example, from a general database, and not from the subject image or sequence of images. A search is initiated by inputting a query, which is a query descriptor of an object. The query descriptor is a representation of a specific object in a specific two-dimensional perspective view. The query descriptor is then compared with the stored object descriptors (for images or sequences of images) as described above. More specifically, for a stored object descriptor, the query descriptor is compared with each of the plurality of view descriptors in the object descriptor. If the query descriptor matches any of the view descriptors, the overall object descriptor is considered a match and the corresponding image or sequence of images is retrieved, even if the perspective view of this object in the query does not match the perspective view of the object in the image or sequence of images. None of Eakins, Eraslan or Haruo, alone or in combination, disclose the above features of the invention."

The examiner respectfully disagrees with the above argument. Eakins discloses searching an image using similarities matching of multi-component images. Fig. 1 in Eakins discloses image having an object, each of object include two dimensional. Further more, Eakins also discloses the query module to select a query image and run search parameters...page 4 where each of the query image is a two dimensional images of an object. Eraslan discloses method and system for retrieving and indexing the two dimensional object of an image with different perspective view for example in

fig. 8 which includes five different views of a nose of a person each and each of the view being index. These different views of nose include the two dimensional such as x and y. Haruo discloses creating a projection image to a two dimensional image flat surface which correspond to providing a plurality of stored image representations of tree-dimensional objects, each image representation being associated with an object descriptor, each object descriptor including a plurality view descriptors, each view descriptor of representing the outline of the shape of a projection of each one of the three-dimensional objects from a different perspective view of the three-dimensional object. Hero's teaching further re-enforce that each of the views of nose is image in Earlap representing the outline of the shape of each of the three-dimensional objects from a different perspective view of the three-dimensional object. Such combination from Eakins and Eraslan and Haruo to arrive to image retrieval of image using outline of an object.

Moreover, in view of the guidance provided by the Supreme Court in *KSR* decision, the a patent claim is prima facie obvious if "some motivation or suggestion to combine the prior art teachings" can be found in the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art. See the recent Board decision *EX parte Smith*, --USPQ2d--, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007 (citing *KSR*, 82 USPQ2d at 1396) (available at <http://www.uspto.gov/web/offices/dcom/bpai/prec/fd071925.pdf>)).

Applicant also argues "Eakins is not concerned with different two-dimensional perspective views of a three-dimensional object in an image. Eakins is not concerned with identifying an object in an image or sequence of images and considering other views of the same object. Eraslan is primarily concerned with generating a three-dimensional facial image from constituent parts, and not with searching for an image or sequence of images containing an object of interest. Eraslan does not disclose an object descriptor including a plurality of associated view descriptors of an object in different two-dimensional perspective views. Neither Eraslan nor Easkins discloses or suggests searching by inputting a query descriptor representing a two-dimensional perspective view of a three-dimensional object and matching the query descriptor with each of said plurality of view descriptors in an object descriptor to identify a "matching" image or sequence of :stages. Similar comments apply to Haruo, which merely discloses converting three-dimensional shape data to a two-dimensional plane. There is no object descriptor with associated different two-dimensional perspective views, and no searching by matching a query descriptor with each of a plurality of associated view descriptors. None of Eakins, Eraslan or Haruo discloses or suggests retrieving an image sequence of images including an object in a first perspective view by matching with a query descriptor of the object in a different perspective view. "

The examiner respectfully disagrees with the above argument. As described above, the combination of Eraslan suggests indexing an object (ear, nose or head) of an image different view (fig. 8). These images which are mug shot can be access remotely the law enforcement. Haruo's teaching further re-enforce that each of the

views of nose is image in Eraslan representing the outline of the shape of each of the three-dimensional objects from a different perspective view of the three-dimensional object. Furthermore, Eakins discloses searching an image using similarities matching of multi-component images. Fig. 1 in Eakins discloses image having an object, each of object include two dimensional. Further more, Eakins also discloses the query module to select a query image and run search parameters... (page 4), where each of the query image is a two dimensional images of an object. Such combinations yield result as applicant claimed invention as suggest in KRS above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 6-10 and 33-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eakins et al. (Retrieval of trade mark images by shape feature-the ARTISAN project) (May 22, 1996) in view of Eraslan (US. Patent No. 6,801,641 B2) and further in view of Haruo et al. (JP 06-215105 Pub. No. 05/08/1994).

Regarding on claim 6, Eakins teaches a method of searching for an object in still or video image by processing signals corresponding to the images, the method comprising:

Inputting a query in the form of at least a two-dimensional outline of an object (to allow formulation of visual queries) (page 2 of 9, line 35);

Deriving a query object descriptor of the query object (search parameters extracts appropriate shape features from the query image) (page 4 of 9, line 33-34);

Comparing said query object descriptor with at least one of said object descriptors (computes appropriate similarity scores between query and stored image by shape feature matching) (page 4 of 9, lines 34-35);

Selecting and displaying at least one result corresponding to one of the image representations containing an object for which comparison between the associated object descriptor and the query object descriptor indicates a degree of similarity between the query object and said object (displays the most similarity retrieved images on the screen) (page 4 of 9, lines 37-37).

Eakins does not explicitly teach providing a plurality of stored image representations of three-dimensional objects, each image representation being associated with an object descriptor, each object descriptor including a plurality of view descriptors, each view descriptor representing the outline of the shape of a projection of each one of the three-dimensional objects from a different perspective view of the three-dimensional object. Eraslan teaches providing a plurality of stored image representations of three-dimensional objects, each image representation being

associated with an object descriptor, each object descriptor including a plurality view descriptors, each view descriptor of representing the outline of the shape of a projection of each one of the three-dimensional objects from a different perspective view of the three-dimensional (col. 4, lines 2-8). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Eakins' system to include the different view of three-dimensional stored object in the database as taught by Eraslan in order to provide a faster search and retrieval system. Furthermore, Haruo also discloses providing a plurality of stored image representations of three-dimensional objects, each image representation being associated with an object descriptor, each object descriptor including a plurality view descriptors, each view descriptor of representing the outline of the shape of a projection of each one of the three-dimensional objects from a different perspective view of the three-dimensional object (page 5, paragraph 0042). This suggests the object having different shapes. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify Eakins and Eraslan to include each view descriptor representing an shape of an object as disclosed Haruo in order to allow the retrieval of an image using shape.

Regarding on claim 7, Eakins a query is input in the form of two or more two-dimensional outlines of an object, and wherein a query view descriptor is derived for each said outline, and wherein the step of comparing comprises comparing each said query view descriptor with each view descriptor in each stored object descriptor to derive a plurality of view similarity values (page 4 of 9, lines 33-37).

Regarding on claim 8, Eakins teaches the view-similarity values are analyzed to derive object similarity values (page 4 of 9, lines 33-37).

Regarding on claim 9, Eakins teaches at least some of the object descriptor include view-independent descriptors which are related to shape/or size of the object, and wherein the method comprises inputting a view-independent query value and the step of comparing compares the query value with the view-independent descriptors for the stored object descriptor (page 4 of 9, lines 33-37).

Regarding on claim 10, Eakins teaches the query descriptor is derived using a curvature scale space representation of the query object outline (page 4 of 9, lines 33-37).

Claim 33 is rejected under the same reason as claim 6.

Regarding on claim 34, Eakins teaches the query descriptor is derived using a curvature scale space representation of an outline of the query object (page 4 of 9, lines 33-37).

Regarding on claim 35, Eakins teaches the stored descriptor is derived using a curvature scale space representation of an outline of the three-dimensional object (page 4 of 9, lines 33-37).

Claim 36 is rejected under the same reason as claim 6.

Regarding on claim 37, Eakins teaches selecting and displaying includes selecting and displaying an image representation of an object having a different view

from perspective view of said query object based on said query object matching with at least two view descriptors including a view descriptor not representing perspective view of the object in the image representation (page 4 of 9, lines 33-37).

Regarding on claim 38, Eakins teaches one of the view descriptors corresponds to a view of the object as the object appears in the respective image representation (page 4 of 9, lines 33-37)

Regarding on claim 39, Eakins teaches one of the view descriptors corresponds to a perspective view of the object different from the perspective view of the object as the object appears in the respective image (page 4 of 9, lines 11-14).

Regarding on claim 40, Eakins teaches selecting include selecting and displaying an image representation including an object having a different perspective view from perspective view of said query object based on said query object matching with at least two view descriptors including a view descriptor not representing view of the object in the image (page 4 of 9, lines 33-37).

Regarding on claim 41, Eakins teaches each said view descriptor is a different representation of the object from a different perspective view of the three-dimensional object (page 4 of 9, lines 33-37).

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is at 571-272-4041 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached at 571-272-4107.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is assigned are as follow:

(571) -273-8300 [Official Communication]

/Baoquoc N To/

Primary Examiner, Art Unit 2162

July 6th, 2008